





JAMES J. WARING  
MEMORIAL BOOK FUND  
YALE MEDICAL LIBRARY





# Sir Lyon Playfair's Logic.

BY

W. J. COLLINS, M.D., B.S., B.Sc. (LOND.)

UNIVERSITY SCHOLAR AND GOLD MEDALLIST,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

*Reprinted from the "Vaccination Inquirer."*

LONDON:

F. W. ALLEN, 4, AVE MARIA LANE.

1883.



WYMAN AND SONS, PRINTERS,  
GREAT QUEEN STREET, LINCOLN'S INN FIELDS,  
LONDON, W.C.

## SIR LYON PLAYFAIR'S LOGIC.

---

TO those who, like myself, looked to Sir Lyon Playfair for a scientific solution of the question of compulsory vaccination, his speech must have proved a bitter disappointment. It contained nothing novel to those acquainted with the subject; even the fallacies that crept into it were not new; and there was a lack of judicial impartiality from the beginning to the end.

Facts favourable to vaccination were dwelt upon with emphasis and in detail; adverse facts were laughed at, ignored, or explained away, while the great sanitary and moral questions, more important than either, were thrust aside as quite insignificant.

I am not concerned either to defend or oppose vaccination. But, so long as it is endowed and enforced by the State, it is fair to insist that its reputed virtues shall be demonstrated conclusively, unmistakably, and beyond all question.

I offer the following criticisms in no hostile spirit, but with a sincere desire, by means of scientific inquiry and discussion, to arrive at logical conclusions, and with a just respect for the author of the speech in question.

The first objection with which Sir Lyon Playfair dealt was the charge of the communicability of inoculable diseases by vaccination; and he satisfied himself that he had disposed of it by a reference to the report of the Committee of 1871, and by stating that "they knew that, since 1853, 17,000,000 children had been vaccinated in this country, and it was very doubtful whether there were three or four specific cases where this disease (syphilis) had ever been produced." Now, in the first place, it does not betray scientific accuracy in being satisfied with information twelve years old, more especially as pathological research in this particular department of infective diseases, and their mode of transmission, has been greatly extended of late, and has completely revolutionised the antiquated opinions quoted, which were received, nevertheless, with approval and cheering by hon. members. As to the "three or four specific cases," suffice it to say that Mr. Jonathan Hutchinson, in a few years only, came across no less than twenty-four cases of vaccino-syphilis, and some of the facts respecting these twenty-four are so striking and suggestive that I venture to quote them. Mr. Hutchinson, be it understood, is a "firm advocate of compulsory vaccination," so that his evidence is the more unassailable; yet he opines:—"there can be no doubt that the danger of transmitting syphilis is a real and very important one." His first series of cases he summarises thus:—

"Twelve persons, mostly young adults, vaccinated from a healthy-looking child. Satisfactory progress of the vaccination in all. Indurated chancres on the arms of ten of the vaccinated in the eighth week. Treatment by mercury



in all. Rapid disappearance of the primary sores ; constitutional symptoms in four of the patients five months afterwards, the vaccinifer showing condylomata at the age of six months."

These cases, Mr. Hutchinson states, were brought to the notice of the medical officers of the Privy Council, and Dr. Seaton requested that he should investigate them. I call attention to this to disprove a widely current inaccuracy, an example of which I extract from Mr. Ernest Hart's "Truth," to the effect that "No case of syphilis caused by vaccination has ever been discovered by the Medical Department of the State during the twenty years that it has supervised the vaccination of the kingdom." \*

Mr. Hutchinson's second series is not less instructive. The cases are thus summarised :—"Unquestionable symptoms of constitutional syphilis in nine children who had been vaccinated from the same patient, suspicious symptoms in six others, and entire escape of a certain number ; vaccinifer a fine healthy-looking child, but with slight local symptoms indicative of inherited syphilis." And respecting the vaccination of these he adds :—"Nothing had occurred to excite the vaccinator's suspicions, not a single one of this series having been taken back to him on account of the unhealthy condition of the arm. On making inquiries at the houses of the patients, however, we found that no fewer than nine had chancres on the arms, and that six were suffering from well-marked and copious syphilitic rashes."

Sir Charles Dilke, in a somewhat casual reference to

---

\* "The Truth about Vaccination," by Ernest Hart. 1880.

vaccino-syphilis, intimated that it was only when blood was admixed with lymph that syphilitic infection was possible. Here, again, official information is strangely out of date, and the medical authorities of the Local Government Board would do well to endeavour to keep abreast of pathological research, especially in the matter of inoculable disease. In 1877 Mr. J. Hutchinson wrote :—  
 “Next, we may ask, is it absolutely necessary that blood should be used in vaccination in order to convey syphilis? It seems highly probable that it is not. At any rate there is not the least evidence in three of the series of cases which I have recorded that the lymph used was visibly contaminated with blood.”\*

From these premisses respecting vaccino-syphilis I draw the following conclusions:—First, that the danger of transmitting syphilis by vaccination is real and important, and cases of the kind not very uncommon; † second, that inasmuch as a syphilitic vaccinifer may betray no sign of

---

\* Illustrations of Clinical Surgery, Fasc. VI. pp. 130.

† Lancereaux has published the following cases of Vaccino-Syphilis—

By Cerioli ...	40	By Lecoq ...	2	By Chassaignac ...	1
„ Tassani ...	46	„ Galligo ...	14	„ Hérard ...	1
„ Surgeon B. ...	19	At Rivalts ...	46	„ Adelasio ...	2
„ Hübner ...	8	By Trousseau ...	1	„ Monell ...	1
„ Marcolini ...	40	„ Maronni ...	34		
„ Viani... ...	2	„ Devergie ...	1	Total ...	258

To these may be added the following published cases—

By Hutchinson ...	24	At Lebus ...	18	By Fuqua ...	52
„ T. Smith ...	1	By Depaul ...	59	„ Cullimore ...	1
„ Hulke ...	1	„ Sebastian ...	1	In Algiers ...	58
„ Oldham ...	3	„ Collins ...	2		
				Total ...	478

the disease, and that admixture of blood is not essential to infection, we as yet know of no safeguard against arm-to-arm infection ; third, that it is possible for wholesale syphilisation by vaccination to go on “without even exciting a vaccinator’s suspicions”—a fact which somewhat detracts from the value of the assurance of public vaccinators, who have vaccinated thousands and never seen a bad result, and who, as a rule, lose sight of their patients after the eighth day.

Respecting the accusation that diseases of the skin and erysipelas follow and are caused by vaccination, the learned doctor imagined he answered it by a story about a policeman who attributed a recent eruption to seven years’ antecedent vaccination, by asserting such cases were instances of the *post hoc ergo propter hoc* fallacy, and by denying that erysipelas was increasing or had any relation to the question before them. And Sir C. Dilke followed in the same strain when he said: “The one disease which has been put forward as being distinctly caused by vaccination is erysipelas, and yet there has been a distinct decrease in the mortality from that disease.” Now, such statements as these are both unfair and misleading, and quite unworthy of any scientific inquirer. As it happens, deaths from erysipelas resulting from vaccination are classified separately from erysipelas arising from other causes, and, while it may be true that the latter are decreasing, Sir Lyon Playfair and Sir Charles Dilke would, if they had taken the trouble, have found it equally true that the former are rapidly increasing. I extract the following from the yearly returns of the Registrar-General:—

## DEATHS FROM "ERYSIPELAS AFTER VACCINATION."

1859 ... ..	5	1870 ... ..	20
1860 ... ..	3	1871 ... ..	24
1861 ... ..	2	1872 ... ..	16
1862 ... ..	3	1873 ... ..	19
1863 ... ..	11	1874 ... ..	29
1864 ... ..	13	1875 ... ..	37
1865 ... ..	10	1876 ... ..	21
1866 ... ..	10	1877 ... ..	29
1867 ... ..	4	1878 ... ..	35
1868 ... ..	9	1879 ... ..	32
1869 ... ..	19	1880 ... ..	39

Total in 22 years... .. 390

The table shows these deaths have increased nearly eightfold in thirty years, and, when it is borne in mind that all such cases are not returned as such, in order, according to Mr. May, M.R.C.S., "to save vaccination from reproach," that not one of the cases at Gainsborough and only one of the cases at Norwich were certified thus, it will be seen that these figures only represent a portion of the whole truth. In my review of the Norwich inquiry\* I have shown, contrary to the opinion of Sir Lyon Playfair, and in strict accord with the views of the immortal author of vaccination, that a very close relation indeed does subsist between vaccination and erysipelas—in fact, that vaccine lymph is a septic fluid containing micrococci, and, as such, is capable, *per se*, of causing erysipelas by inoculation, and that the normal vaccine areola is simply a local and mild erysipelas.

Sir Lyon was absolutely incorrect when he asserted that scrofula was decreasing, as the following table, which gives the average yearly deaths under one year of age per

\* "A Review of the Norwich Vaccination Inquiry," by W. J. C.

1,000,000 births from six diseases which have been asserted to be communicable or caused by vaccination, clearly shows. The figures are given for three periods, in accordance with the changes that have been made in the Vaccination Acts, whereby more general vaccination has been secured.

	England.		
	Voluntary Vaccination, 1847 to 1853.	Obligatory Vaccination, 1853 to 1867.	Enforced Vaccination, 1867 to 1878.
Scrofula .....	351	611	908
Syphilis.....	564	1,206	1,738
Erysipelas.....	817	781	834
Skin diseases .....	183	253	343
Pyæmia (not distinguished before 1862)	—	(155)	180
Mesenteric disease .....	2,981	3,371	4,373

Sir Charles Dilke truly remarked: "There has been on the whole a steady diminution in the death-rate of the country, from 22·4 in 1840–50, to 21·4 in 1870–80, and 19·3 in 1881–82." Surely the learned President must see that the onus then lies with him to show why it is that, with diminishing general mortality, we have a steady increase of certain inoculable diseases, especially those which it has from the first been asserted were peculiarly communicable by vaccination. Surely this points to some inoculable cause at work, and it is for the oracle of the Local Government Board to indicate what that cause is, in order that it may be speedily removed.

Upon the slender premisses which I have indicated above, Sir Lyon Playfair founded an argument which, for faulty analogy, it would be difficult to equal. He asked: "Were they to dispense with a remedy which was efficacious over the whole community because a few very rare cases of injury might occur, any more than they were to prohibit

the use of anæsthetics because a patient occasionally died under them, or prohibit drinking water because people sometimes got typhoid from using polluted water?" I must candidly confess that any analogy between the prohibition of certain articles which individuals use at their own risk, and the abolition of the compulsory enforcement of that whose very claim is to render voluntary acceptance of it indifferent to the action of others, may be more apparent to the legal than to the medical mind. And again, to invoke the name of logic to justify a comparison between the assertion that, because certain diseases have in individual cases been proved to be conveyed by vaccination, an increase in collective cases, as shown by statistics, points to a causal relationship, and a fanciful connexion between small-pox and Fenianism in Ireland, is an assumption of the scientific method which is only conspicuous by its absence.

In dealing with the question of the protective influence of vaccination against attack and death by small-pox, Sir Lyon Playfair began by commenting on the mildness of small-pox subsequent to vaccination; but what says Dr. Seaton concerning the epidemic of 1871-74:—"In every country attacked, so far as our information extends, the peculiar intensity of this epidemic was manifested by the extreme diffusiveness of the disease, by its attacking in unusual proportions persons who were regarded as protected against the disease, whether by previous small-pox or by vaccination, and by the occurrence with quite remarkable frequency of cases of malignant and hæmorrhagic type, and a consequent unusually high ratio of deaths to attacks." \*

---

\* "Public Health Reports," New Series, No. 10, p. 51.

And, again, of 24,994 cases of small-pox occurring before the year 1780, and therefore all unvaccinated, 4,707 died, or 18·83 per cent. ;\* while of 48,248 cases of small-pox occurring between the years 1836 and 1880, of whom 34,423 were vaccinated, 8,926 died, or 18·5 per cent.† Either the diluent effect of vaccination was *nil*, or, on the other hand, if it made the disease milder for the vaccinated it (or some cause associated with it) made it also more severe for the unvaccinated, for the mortality remained at precisely the same rate per cent. as before.

The facts respecting small-pox this century and last may be told in a few words. Early last century and in the latter half of the seventeenth century—therefore prior to inoculation—small-pox was a considerable item in London mortality ; from 1660 to 1700 it caused about 56 out of every 1,000 deaths. Inoculation, introduced in 1721, and practised till the end of the century, pushed up the death-rate from small-pox to 108 per 1,000 deaths in 1760–70. After this, *prior to vaccination*, and *in spite of inoculation*, and *pari passu* with a like decline in fever, and therefore owing to some great radical change at work, the small-pox death-rate steadily declined. As Dr. Farr observes :—“Small-pox attained its maximum after inoculation was introduced ; this disease began to grow less fatal before vaccination was discovered ; indicating, together with the diminution in fever, the general improvement in health then taking place.”‡

---

\* Jurin, Duvillard, and Rees' Cyclopædia.

† Collected from various Hospital Reports, by A. Wheeler.

‡ McCulloch's "British Empire."—Art. : Vital Statistics.

The figures for the last fifty years of the eighteenth century are:—

						Small-pox deaths per 1,000 deaths.
1750-1760	...	...	...	...	...	100
1760-1770	...	...	...	...	...	108
1770-1780	...	...	...	...	...	98
1780-1790	...	...	...	...	...	87
1790-1800	...	...	...	...	...	88

Now, if small-pox could decline while inoculation was in full swing, disseminating contagion far and wide, how much the more should we expect it to decline when inoculation received a check by the introduction of vaccination at the beginning of the century? And, again, when the former practice was made penal in 1840? Vaccination may or may not have caused the decline; but what I complain of in Sir Lyon Playfair's argument is that he has entirely ignored all other explanations which leave vaccination out of the count. If the decennial periods be continued, the figures are as follows:—

						Small-pox deaths per 1,000 deaths.
1800-1810	...	...	...	...	...	64
1810-1820	...	...	...	...	...	42
1820-1830	...	...	...	...	...	32
1830-1840	...	...	...	...	...	23
1840-1850	...	...	...	...	...	18

Vaccination was introduced when small-pox was a diminishing quantity, and by its introduction checked a fertile source of its propagation. Has Sir Lyon Playfair estimated the value of these two factors, and, after allowing for them, what difference does he find with which vaccination, and vaccination only, can be credited?

Mr. Marson, when asked before the Committee of 1871



“Do you not think that the lesser prevalence of small-pox in the first quarter of the present century may have been due, to a great extent, to the discontinuance of inoculation, rather than to the practice of vaccination?” replied: “Very likely it was”;\* and Mr. Marson was probably not far wrong.

I next come to the remarkable figures which Sir Lyon Playfair quoted from the forty-third Report of the Registrar-General as follows:—

Sub-periods.	Mean Annual Death-rates from Small-pox per Million Living.					
	1847-53	...	...	...	...	305
	1854-71	...	...	...	...	223
	1872-80	...	...	...	...	156

I need not point out the inequality of the periods compared—seven years with eighteen years, with nine years—but I must complain that the periods chosen are not those which are coëval with the most important improvements in the Vaccination Acts. It was by the Vaccination Act of 1867 that vaccination was first made really and truly compulsory in England, but this does not correspond to the commencement of a period in the table; and again, the Act of 1871 would seem to have had but small effect on the rate per cent. of successful vaccinations to births, for in 1872 (the first year of Sir Lyon Playfair's last period) this was 82·6, whereas in the previous year it was 87·4; so that the improvement in the Act did not tend in the direction of increase of the rate per cent. of vaccinations to births.

Hence, to draw a line between 1871 and 1872 in respect

---

\* Report of Select Committee, May 23, 1871. Quest. 4,648.

of improved vaccination is to make a division where none exists.

Now, the progressive diminution shown in the table is a result of a mere statistical trick, unworthy of a scientist like Sir Lyon Playfair. And, if the year 1871 be taken with the last period instead of the second, we get a strangely different result, thus:—

Sub-periods.				Mean Annual Death-rates from Small-pox per Million Living.		
1847-53	...	...	...	...	...	305
1854-70	...	...	...	...	...	171*
1871-80	...	...	...	...	...	235*

In order to make this clear, and exhibit the whole thing at a glance, I add the deaths from small-pox per million living for each year from 1847 to 1880:—

1847...	...	...	...	246	1864...	...	...	...	373
1848...	...	...	...	398	1865...	...	...	...	309
1849...	...	...	...	264	1866...	...	...	...	144
1850...	...	...	...	263	1867...	...	...	...	118
1851...	...	...	...	396	1868...	...	...	...	96
1852...	...	...	...	409	1869...	...	...	...	72
1853...	...	...	...	174	1870...	...	...	...	118
1854...	...	...	...	153	1871...	...	...	...	1,022
1855...	...	...	...	136	1872...	...	...	...	831
1856...	...	...	...	121	1873...	...	...	...	102
1857...	...	...	...	206	1874...	...	...	...	92
1858...	...	...	...	335	1875...	...	...	...	40
1859...	...	...	...	197	1876...	...	...	...	99
1860...	...	...	...	140	1877...	...	...	...	174
1861...	...	...	...	66	1878...	...	...	...	74
1862...	...	...	...	81	1879...	...	...	...	21
1863...	...	...	...	293	1880...	...	...	...	25

\* These figures are calculated according to the Registrar-General's own formula, which he kindly explained to me. It consists in calculating the rate per million of the average annual small-pox deaths upon the estimated population of the middle year of each period.

"These great reductions in the rate of small-pox mortality I believe to be due wholly to vaccination," says Sir Lyon. Sanitation is not the cause, he says, for it would "diminish all other diseases"; but these have only diminished 6 per cent., whereas small-pox has diminished 80 per cent. in children under five. Six per cent. only of the reduction can be ascribed to sanitation !

Now, if the whole decline be really due to vaccination, it is as magnanimous as inconsistent of the learned doctor to allow 6 per cent. to be due to sanitation ; but even he would probably not be prepared to seriously maintain what he hastily asserted, that *all* diseases other than small-pox are likely to be affected by sanitary measures. Take, for instance, fractures, premature births, suicides, drowning, old age, and teething, which constitute not an inconsiderable item in national mortality.\* To compare small-pox with all diseases other than small-pox is to compare things totally incomparable. Let a comparison be instituted between small-pox and that great class of diseases closely allied to it, and grouped together under the name of fever—viz., typhus, typhoid, and simple continued fever, and let Sir Lyon Playfair's own periods be taken (with the exception of the years 1847-49, for which the Registrar-General does not give the figures for fever), and see what is the result :—

				Deaths per Million Living.	
				Small-pox.	Fever.
1850-53 ...	...	...	...	310	(986)
1854-71 ...	...	...	...	223	940
1871-80 ...	...	...	...	156	473

Now, if the ratio of the first to the last period of small-

---

\* In 1881 no less than 55,238 deaths in England were ascribed to the above-named causes, or one-ninth of the total deaths.

pox death-rate be compared with that of the fever death-rate, it will be found that the latter shows a decline 2 per cent. greater than the former; and the difference left to be accounted for by vaccination, therefore, on this reckoning, becomes a minus quantity. Curiously enough this same concomitant decline of fever and small-pox was noted by Dr. Farr as having occurred at the beginning of the century at a time when small-pox was said to be flying before the advent of vaccination. Dr. Farr says:—"Fever has progressively declined since 1771; fever has declined in nearly the same proportion as small-pox,"\* and the figures he gives are these:—

				Deaths per 10,000 Living.		
				1771-80	1801-10	1831-35
Fever	...	...	...	621	264	111
Small-pox	...	...	...	502	204	83

One more piece of statistical information respecting England and Wales, which Sir Lyon Playfair did not give, I will furnish: the deaths from small-pox in the first ten years after compulsory vaccination was enacted, 1854-1863, were 33,515; during the second ten years, 1864-1873, there were 70,458. I cite this simply to show how, by dividing the periods differently, a very different complexion is put upon the statistics of the question.†

\* McCulloch's "Statistics of the British Empire."

† The following figures from the 44th Annual Report of the Registrar-General just published are instructive:—

		Deaths from Small-pox.		Death-rate from Small-pox per 100,000.	
		England.	London.	England.	London.
1841-50	(6 years)	(29,522)	8,416	29	40
1851-60		42,071	7,150	22	28
1861-70		34,786	8,347	16	28
1871-80		57,422	15,539	24	46

In regard to Scotland, Sir Lyon Playfair speaks with authority, for on July 6, 1870, he said:—"There could not be the slightest doubt that compulsory laws—where properly applied, as in Scotland and Ireland—were perfectly equal to stamp out small-pox in a country."

And figures seemed to support his assertion, for in that year only 114 small-pox deaths were registered in the country. On June 19, 1883, the same authority declared, "Scotland in 1872-73 had a most serious epidemic of small-pox." This time he certainly was correct; for within that period 3,572 persons died of small-pox in Scotland. But, then, the explanation is forthcoming. "Stamping out is not keeping out;" stamped out in 1870, epidemic in 1871! And Sir Lyon Playfair thinks "his phrase 'stamped out' was justified by fact!"

The statement that "the whole case of the anti-vaccinators depends on epidemic years" reminds one of Dr. Ballard's undertaking that he could make the whole case plain if he might be allowed to leave the epidemic years out of consideration; and the declaration that when epidemics come "they first engulf the unvaccinated" is disproved by fact wherever evidence on the subject can be obtained. Thus, in the Cologne epidemic of 1870, 173 vaccinated persons were attacked before the first unvaccinated one.\* In Liegnitz, in 1871, the first unvaccinated to suffer was 225th on the list;† and in Bonn, in 1870, the first unvaccinated victim was the forty-second attacked.

---

\* Dr. de Pietra Santa—Lettre à Messieurs de la Chambre des Députés, Feb. 16, 1881.

† Quoted from petition to the Reichstag in A. C. V. Reporter, June 1st, 1881.

Sir Lyon Playfair dealt cautiously with the London statistics. The Registrar-General puts the whole matter tersely in his report for 1880, when he says:—"The decennium which closed with the year 1880 was one of lower mortality in London than any of the preceding decennial periods. . . . These facts are strong evidence that the sanitary efforts of recent years have not been unfruitful. . . . The evidence in support of this position is rendered still stronger, if, instead of fixing our attention upon the total mortality, we take into consideration its causes. For it will be found that the saving of life was almost entirely due to diminished mortality from causes whose destructive activity is especially amenable to sanitary interference—namely, the so-called zymotic diseases. . . . The death-rate from fever fell nearly 50 per cent. . . . that of scarlatina and diphtheria fell 33 per cent. . . . *One disease alone in this class showed exceptionally a rise, and no inconsiderable one. This was small-pox, which, owing to two great outbreaks of 1871-72 and 1877-78, gave a death-rate nearly 50 per cent. above its previous average.*" That is to say, the only disease against which a special prophylactic is invoked has increased, while those fought on common, rational, sanitary grounds have decreased. Is it that vaccination has blinded us to the real cause of small-pox, and that the fashionable fiction that "sanitary measures have no influence on small-pox" is bearing its pernicious fruit?

One great fact goes behind all Sir Lyon Playfair's statistics, and falsifies them; he has omitted to prove his major premiss—he has not shown that less small-pox means fewer deaths, and he cannot show it. As long as zymotic

disease exists, it continues a quantity, composed of varying proportions of the same elements; one epidemic predominates for a time, but it is at the expense of others, and it scarcely affects the total death-rate at all. The test of improvement is the decline, not of one zymotic, but of the total class death-rate.

Dr. Farr puts the same thing thus :\* “It is by no means proved that the general mortality, under unfavourable sanitary conditions, is much reduced by rendering a person insusceptible of one type, while he remains exposed to all other types of zymotic disease.” And again : “To operate on mortality, protection against every one of the fatal zymotic diseases is required, otherwise the suppression of one disease-element opens the way to others.” If statistical proof be desired, it is at hand. In Prague, from 1796–1802, the general mortality was 1 in 32, at a time when the small-pox mortality was 1 in 396 $\frac{2}{3}$ ; but in 1832–55, when the small-pox mortality was only 1 in 14,741 $\frac{1}{5}$ , the general mortality was still 1 in 32 $\frac{1}{3}$ .† Again, in India, the same fact comes out : in a recent Blue-Book it is stated “the vaccination returns in India show that the number of vaccinations does not bear a ratio to the small-pox deaths. Small-pox in India is related to season, and also to epidemic prevalence. It is not a disease, therefore, that can be controlled by vaccination, in the sense that vaccination is a specific against it. As an endemic and epidemic disease, it must be dealt with by sanitary measures, and if these are neglected small-pox is certain to increase during

---

\* Letter to Registrar-General, 30th Annual Report, 1869, p. 213.

† Papers relating to Vaccination.—Simon, 1857.

epidemic times. Vaccination has no power, apparently, over epidemic small-pox. It would scarcely answer, in the face of these facts, to go on vaccinating the people to protect them from small-pox, while leaving them surrounded by such disease causes as the reports would show to exist in all the villages affected.”\* So that it would seem to be a just conclusion from the foregoing that vaccination is inoperative in the absence of sanitation and superfluous in its presence; that if you could put out one zymotic disease by vaccination, people would die at the same rate as before, unless you abolish all by universal sanitation.

I must next refer to the figures giving the small-pox mortality respectively among vaccinated and unvaccinated children in London. These, according to Sir Lyon Playfair, give a ratio of the latter to the former equal to 44 to 1.

Now, in order that statistics of this kind may have any value, it is necessary to ascertain the ratio of vaccinated to unvaccinated persons in the general population of London; and, secondly, to be sure that the two classes compared are in all respects other than vaccination practically on a par. Now, it is safe to assert we have no means at our disposal to gauge accurately the extent to which Londoners are vaccinated. Sir Lyon Playfair pretends only 2 or 3 per cent. are unvaccinated—*i.e.*, 98 or 97 per cent. vaccinated; the higher the figure, of course, the better for his argument. Now for years past 6 to 8 per cent., and more, of London children have remained unaccounted for as regards

---

\* “Report on Sanitary Measures in India, 1879-80.” Vol. XIII. 1881.



vaccination, and these figures only relate to the registered births. Some two years ago an examination of a number of children was made in Bethnal Green, one of the better vaccinated parishes, and then 13·8 per cent. of them were found to be unvaccinated. Now  $98 + 13\cdot8$  does not equal 100. So that Sir Lyon Playfair's unvaccinated class is much too restricted. Again, in 30 per cent. of small-pox deaths,\* there is no information respecting vaccination, and how are we to know whether the desire "to save vaccination from reproach" was stronger than the hesitation to witness to transgression of the Vaccination Acts, which has been drily suggested as an explanation of the "not stated cases"? Then, with regard to the comparability of the two classes; are they identical in other respects? Sir Lyon says they are (his argument would be worthless were it otherwise). "They were living," he says, "under the same conditions; they were living in the same houses, they were eating the same food, they were breathing the same epidemic air." Dr. Buchanan, with greater assurance, declares: "No one suggests that the vaccinated and unvaccinated classes live under conditions differing from each other in their influence on small-pox, unless it be this one condition of vaccination." But in the *British Medical Journal*, Oct. 23, 1880, we read: "The high death-rate in the unvaccinated must not be compared with the lower rate in the vaccinated, nor with the general mortality from small-pox before the discovery of vaccination, without a fair consideration of all the facts which may help to arrive

---

\* Buchanan: "Small-pox in London in 1881." Report to the Local Government Board.

at a just conclusion. It is probable that a large proportion of unvaccinated persons is to be found among the ignorant, dirty, and wretched inhabitants of the slums of London, and very few, indeed, among the educated and better-fed members of society. The disease is much intensified by over-crowding." Dr. Bakewell, who gave evidence before the committee of 1871, observes: "It must not be forgotten that in all European countries the unvaccinated are taken from the poorest and most neglected classes of the community, and may fairly be expected to be bad subjects for any disease like variola. This should be borne in mind in estimating the mortality of vaccinated and unvaccinated."

I do not say that this will explain the whole of the disparity between the two death-rates, but I do say that Sir Lyon Playfair, by not only not allowing for this, but even denying any difference other than vaccination, has proved himself a better special pleader than an impartial investigator.

Let us turn for a moment to the incidence of small-pox attacks, not small-pox deaths, for this is the all-important point in the plea for compulsion.

If vaccination only mitigates small-pox when it comes, and does not lessen liability to attack, the last shred of argument for compulsion is torn away; for mild small-pox, all authorities agree, is as contagious as the most severe. hence there is no more danger to others from a malignant unvaccinated case than from a discrete vaccinated one. Now, in the epidemic of 1871, 91·5 per cent. of the cases admitted to the Highgate Hospital were vaccinated, and at the same place in 1881, of 491 cases only twenty-one

were not vaccinated, and this at a time when certainly not more than 90 per cent. of Londoners were "protected;" and, indeed, in an outbreak at Bromley, comprising forty-three cases, every one of the victims had been vaccinated and three re-vaccinated,\* so that it would seem, as regards the relative incidence of small-pox, vaccination has very little effect. If I wished to improve the occasion, after Sir Lyon Playfair's example, I might quote Dr. Browning, who gives particulars of 469 cases of post-vaccinal small-pox, of whom ninety-nine died, or 21·108 per cent. of whom he says, "many of these sufferers showed good vaccine marks of the kind that would be deemed worthy of an extra grant from the Government Inspector, and yet they took small-pox—some within six days, some within six months, and some within six years of their vaccination date."

Sir Lyon Playfair found fault with Mr. Taylor for having said that 150 years ago inoculation was in full practice, and Mr. Taylor may have been thirty years out in his reckoning, but Sir Lyon was not much more than a century wrong when he informed the House that the black death (1348-49) followed in the wake of the Wars of the Roses (1455)!

The whole of the argument about the relative amount of small-pox in the French and German armies hinges on the point which it seems impossible to arrive at—viz., the condition of the French army in respect of vaccination and re-vaccination. But of what avail is an argument that, because unre-vaccinated French soldiers, destitute, defeated, and dejected, suffered severely from small-pox, therefore

---

\* *Lancet*, April 27, 1881.

vaccination should be compulsory all over England, and in parts where small-pox is unknown? The 23,469 deaths from small-pox in the French army, though cited in St. Petersburg and Berlin, twice published in the *British Medical Journal*, approved by Dr. Carpenter, proclaimed by Sir Lyon Playfair, and declared by Sir Charles Dilke to be simply "crushing," have been proved, nevertheless, to be a pure fabrication, there being no statistical data of the Franco-German War worthy of the name. The one certain fact about the matter seems to be that 263 well re-vaccinated German soldiers died of small-pox.

Diseases are specific, said Sir Lyon, and vaccination can convey no disease but itself—theoretically true, practically an absurdity. If it were possible to filter off the vaccine germs from vaccine lymph and use these alone, it might be possible to avoid all other taint; but vaccine virus, what is it? It is the serum of blood, containing also blood-cells in small numbers along with the vaccinal germs, and the constituents derived from the blood may naturally carry with them any poison contained in the blood. Vaccine lymph can, therefore, convey any disease whose cause can reside in the blood, and therefore in the lymph of a vaccine vesicle.

Respecting the oft-told tale of diminished pock-marked faces, it is curious and instructive to quote the following extracts, the one from the National Vaccine Establishment's Report, for 1825; the other from the *Lancet*, June 29, 1872. The former asks: "What argument more powerful can be urged in favour of vaccination than the daily remark which the least observant must make, that in our churches, our theatres, and in every large assemblage of the people to

see a young person bearing the marks of small-pox is now of extremely rare occurrence?"

That is to say, twenty-five years before vaccination was made compulsory, pock-marked faces were all but banished ; whereas, nineteen years after the introduction of compulsion, the *Lancet* laments "the growing frequency with which we meet persons in the street disfigured for life with the pitting of small-pox. Young men, and still worse, young women, are to be seen daily whose comeliness is quite compromised by this dreadful disease." Both statements are worthless as evidence to one who has acquainted himself with statistics. It is true pock-marked faces are rarer than they used to be, because small-pox is rarer and better treated than it used to be ; but so, also, is fever, and the decline of fever is simply not so markedly observed because people do not carry "the stamped receipt" of fever about them on their persons. It is true, and no one can deny it, that small-pox in London declined at the end of the last century and the beginning of this, in a remarkable way, and in nearly the same ratio as fever ; but it is equally true that for the last thirty years (under compulsory vaccination) the number of deaths by small-pox in London has increased, and it is not surprising that pock-marked faces have multiplied accordingly. Here are the figures :—

1851-60	...	...	...	...	...	7,150
1861-70	...	...	...	...	...	8,347
1871-80	...	...	...	...	...	15,539

The foregoing are the criticisms which suggested themselves to me while listening to Sir Lyon Playfair's speech. If I have put the opposite side of the case more strongly than fairly—and I do not think I have—it is in

order to show that this well-nigh interminable question is not to be summarily dismissed as undebatable and one-sided. Of course the public prints which are not scientific in their way have accepted with unquestioning faith Sir Lyon Playfair's "semi-scientific" exposition, and the following piece of concentrated ignorance and inaccuracy I quote from the *Globe* of June 20 :—

"In fine, every fact, every circumstance, every experience supports the conclusion that, were the law to be altered in accordance with Mr. Peter Taylor's views, the immediate result would be to very largely increase the rate of mortality."

I might re-write it thus:—No fact, no circumstance, no experience supports the conclusion that were vaccination able to abolish small-pox, the death-rate would be lowered in the least, so long as insanitary conditions prevail. And, in fine, if sanitation prevailed, the very *raison d'être* for vaccination, to say nothing of compulsion, would be everlastingly destroyed.













Accession no. 27081

Author Collins, W.  
Sir L. Playfair's  
logic. 1883.

Call no. Inoc.

